

Activity 6: Tsunami Effects in Africa Using Published and Custom-Made Maps

A tsunami is a huge sea wave caused by earthquakes or other large-scale disturbances of the ocean floor. They are sometimes incorrectly referred to as tidal waves.

In this exercise, you will examine the location of earthquakes that have caused tsunami effects in Africa and the effects of these tsunamis. The locations and characteristics of tsunami sources and tsunami effects will be analyzed.

Project Steps

Sources Sources used in this assignment:

Rand McNally Classroom Atlas. 1997. ISBN 528-17729-X.

Rand McNally Goode's World Atlas. 1995. 19th Edition. LC Catalog Card Number 94-68645.

World Geography Today. 1997. Holt, Rinehart, and Winston. Austin: Harcourt Brace and Brace and Company. ISBN 0-03-016802-3.

Examine the following maps:

Africa Cities and Population Map:

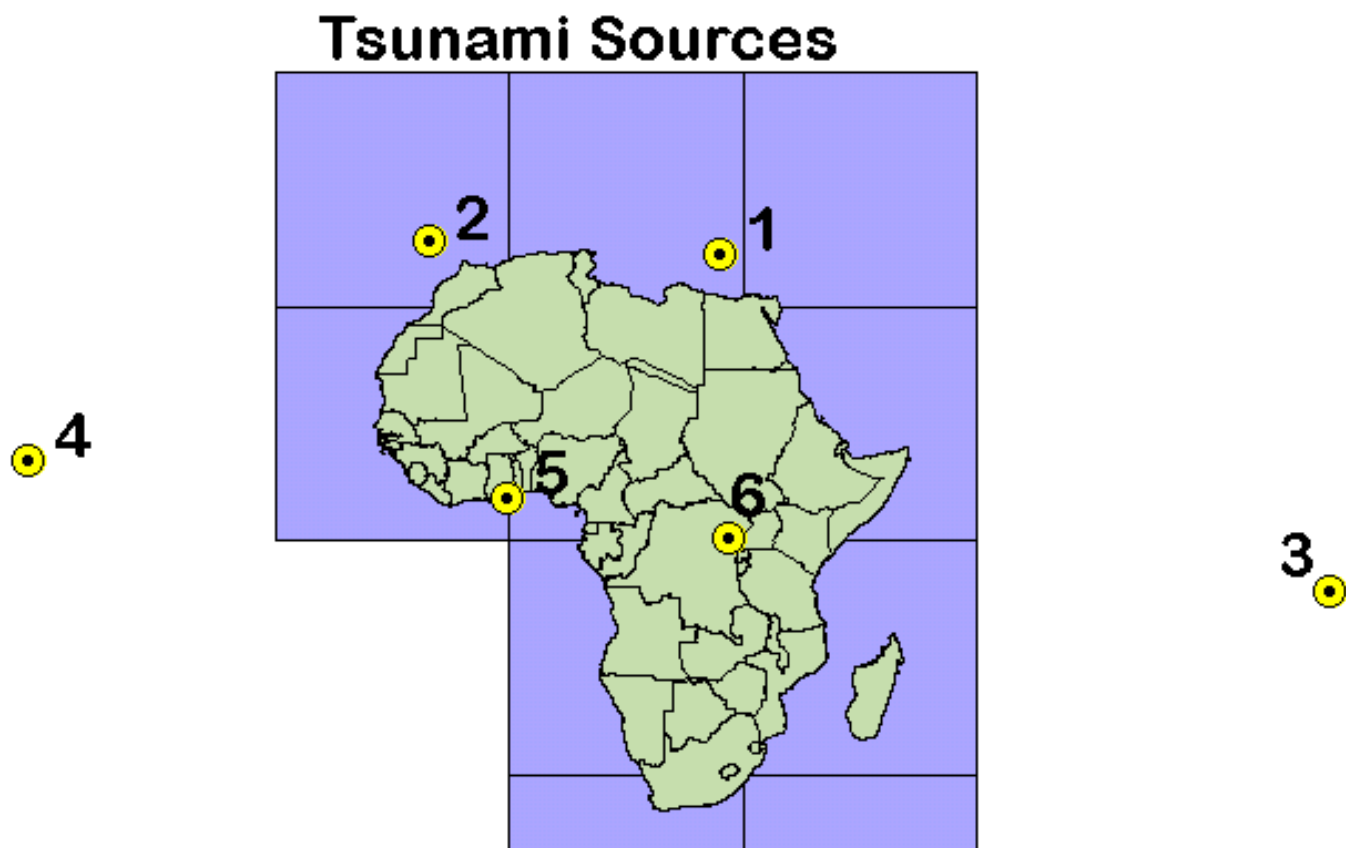
World Geography Today. Page 419.

This map shows population density in persons per square mile and persons per square kilometer. It also shows metropolitan areas with 2 classifications:


Metropolitan areas with more than 2 million inhabitants.

Metropolitan areas with 1 to 2 million inhabitants.

Africa Tsunami Source Map:



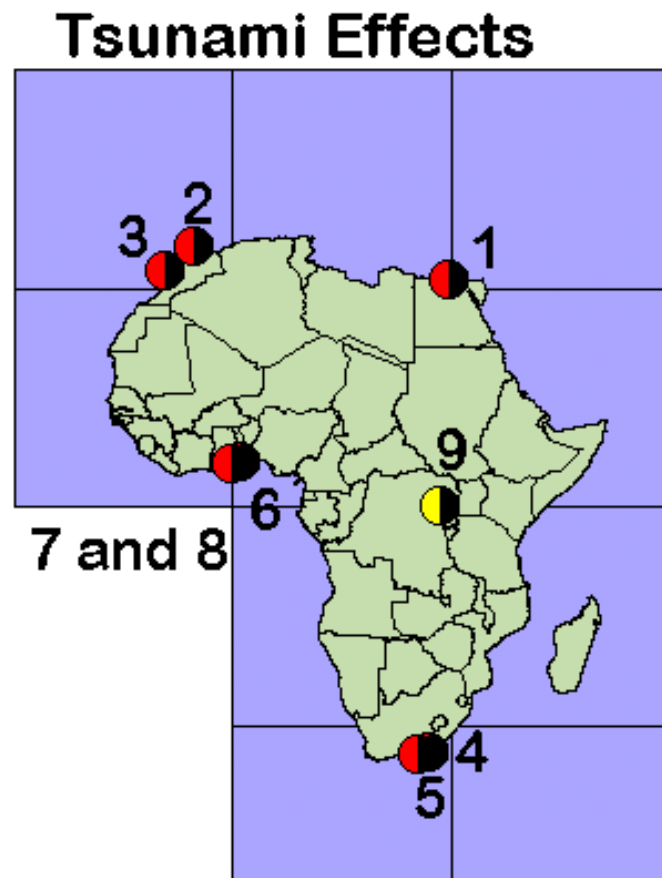
Africa Tsunami Source Table:

 **Attributes of T_source.shp**

<i>Shape</i>	<i>SourceNumber</i>	<i>Year</i>	<i>Month</i>	<i>Day</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Magnitude</i>	<i>Region</i>
Point	1	1303	8	8	36.5	27.3	8.0	LYBIAN SEA
Point	2	1755	11	1	38.0	-10.0	0.0	PORTUGAL
Point	3	1883	8	27	-6.7	105.4	0.0	S. JAVA SEA
Point	4	1911	11	3	10.0	-61.4	0.0	TRINIDAD
Point	5	1939	6	22	5.2	0.0	6.5	GOLD COAST
Point	6	1957	1	22	0.0	28.5	6.3	CONGO

Step 1

Africa Tsunami Effect Map:



Africa Tsunami Effect Table:

Attributes of T_effect.shp										
Shape	EffectNumber	Year	Month	Day	Latitude	Longitude	Region	Location	Runup_mete	Description
Point	1	1303	8	8	31.20	29.90	EGYPT	ALEXANDRIA	0.0	Ship grounded, city walls swept a
Point	2	1755	11	1	35.57	-5.36	MOROCCO	STRAIT OF GIBRALTAR	2.1	
Point	3	1755	11	1	32.30	-9.28	MOROCCO	SAFI	0.0	Town inundated.
Point	4	1883	8	27	-33.60	26.90	SOUTH AFRICA	PORT ALFRED	0.6	
Point	5	1883	8	27	-33.97	25.58	SOUTH AFRICA	PORT ELIZABETH	0.9	
Point	6	1911	3	11	6.13	1.22	GOLD COAST	LOME	0.0	Wharf destroyed by tidal wave.
Point	7	1911	5	11	6.00	0.00	AFRICA		1.5	
Point	8	1939	6	22	6.00	0.00	AFRICA		0.6	
Point	9	1957	1	22	0.00	28.50	CONGO	KIVU	1.5	

Step 2 Answer the questions below.

Questions

Question 1 Name a city with a population greater than 2 million that may be at risk from a tsunami.

Question 2 Examine the tsunami that had its source in the middle of the Atlantic Ocean. Name the sites affected by this source.

Question 3 How far apart are the Tsunami Source and Tsunami Effect described in Question 2?

Question 4 Look at both the Tsunami Effects table and the Tsunami Sources table. Arrange the two tables next to each other so that you can compare the dates in the two tables.

By comparing the two tables, determine which Tsunami Sources caused Tsunami Effects in more than one location.

Question 5 Which tsunamis actually caused some type of damage?

Question 6 When an earthquake causes a disturbance in a lake rather than in the ocean it is called a "seiche".

Determine the date and name of the city where the Tsunami Effect was a seiche rather than a tsunami.

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URL:<http://rockyweb.cr.usgs.gov/outreach/africa/act6non.html>

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